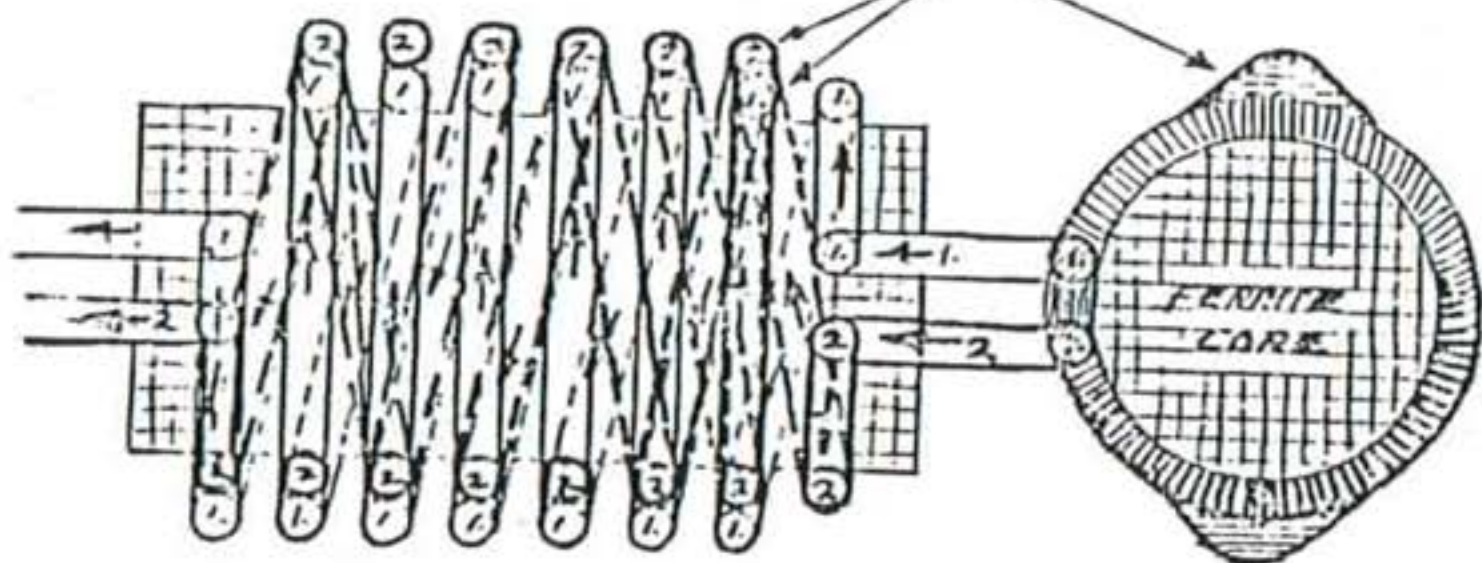


# The Smith Coil

WHERE WIRES CROSS-MAY BE  
WHERE ELECTRON "CUT-THROAT"



SCHEMATIC OF CADUCEUS WINDING  
USED IN SMITH COIL.

By Gaston Burridge

THE SMITH COIL is as mysterious a device today as either the Hendershot Motor, or the Moray Radiant Energy apparatus ever was in their day. If the Smith Coil works, as some who have experimented extensively with it say it works, then we have a gadget which defies the laws of physics.

Conservation of Energy! There is a good deal of controversy here! I hope to outline some of the results of a two-year search I've made into this matter and to add a few suggestions of my own so that any reader who wishes may follow in their own experimenting. There are probably some secrets first time revealed herein. If so, it won't hurt the matter any.

Wilbert Brockhouse Smith said he did not invent the Smith Coil in a normal way. He indicated the information for it came to him from the other side! Whether he meant it came to him from extraterrestrial sources, such as UFOs or Space Creatures, or whether he meant it came to him from "spirit entities" I have never been able to ascertain. Of course, how any idea comes to anyone, any time, still lies in deepest mystery, even to those well acquainted with that machine we call the human brain. Communication between *this side* and the *other side* cannot be reliably initiated or maintained at will by most of us. Understanding the other side is certainly not highly developed at present.

Wilbert Smith was born at Lethbridge, Province of Alberta, Canada, February 17, 1910. He died December 17, 1962. Mr. Smith obtained his B.Sc and M.Sc degrees in Electrical Engineering, from the University of British Columbia, in 1933 and 1934. He spent four years with Radio Station CJOR, Vancouver, B.C., becoming its Chief Engineer. In 1939 he joined the Department of Transportation of Canada, where he continued working in the broadcast field. Mr. Smith advanced in broadcasting with growing responsibility and scope over the years as he remained with the Canadian Government. In December of 1959, at his request, Project Magnet was authorized by that Department and its full laboratory facilities were given to the study of the then very popular manifestation known as the UFOs — or Unidentified Flying Objects. Four years later the project was dropped by the Department — officially and financially. However, Mr. Smith continued his interest in the UFO field privately.

Wilbert Smith wrote a series of monographs which were collected and assembled by his wife and son in 1964. They titled them, *The New Science*. Those who have studied these writings say they contain the basics — the underlying principles — the "whys" of the Smith Coil. I find no specifics in them. Theories, perhaps. Conjectures, surely. But no specifics. It might be well to mention that Mr. Smith did not approve of this Coil being called the Smith Coil. He referred to it only as *The Coil*, but his name has become attached to its particular winding, and what little appears known about it.



Two items set the Smith Coil apart from ordinary coils of wire. One, *how* the coil is wound. Two, *what* the coil is wound on. Let us look first at what this coil is wound on, leaving the rather more complicated *how* until later.

Originally, the Smith Coil was said to be wound on a *ferrite* core. Right off, that says a lot — but it also says very little because the word *ferrite*

found no agreement on this point. Some experimenters think it makes little difference. Others disagree heartily. One man with whom I corresponded on the matter wrote me that in later work, "Smith wound coils on a plastic tube filled with *pure iron pellets*." The sealing of the tube kept the pure iron pellets from oxidizing in the air.

Ferrite, as a material, has a wide application in a great variety

clays, all of which are molded, pressed, cast or otherwise formed into any number of shapes. When completed, they possess magnetic properties suitable to the particular need of the device or apparatus for which they were originally designed. Some ferrite is molded into plain sticks or hollow cylinders of various diameters and lengths. These are of a more or less standard composition. Many of the Smith Coils I have heard about have been wound on one of these standard sticks or tubes. They measure an inch-and-a-half in diameter and nine or ten inches in length. It would make an interesting project to determine which of the many kinds of ferrite sticks caused the Smith Coil to perform best and under what conditions. A tremendous amount of research needs to be done along these lines. It could require many years of work. Some interesting areas for research would be: The effect obtainable by winding a coil on a "U-shaped" ferrite core — or on a long, cone-shaped one — or on an oval-shaped piece? These shapes would provide further variables beyond the metals the "X" in the ferrite formula represents. There seems also a good possibility of using two combinations of ferrite — a cylinder of one type, a tube of another — the inside one movable in relation to the one the coil is wound upon. I might add that as far as I have been able to determine, very little has been done along the lines of using larger diameter cores or longer cores. The larger diameter ones would probably make the most difference, as we will see, because of the way the coil itself is put together. I suspect, too, that solids of multi-materials would also give varying effects. Another variable presents itself in the matter of winding a coil around a laminated core — laminated meaning a core made up of many thin sections of the same material, or differing materials, each section lightly "in-

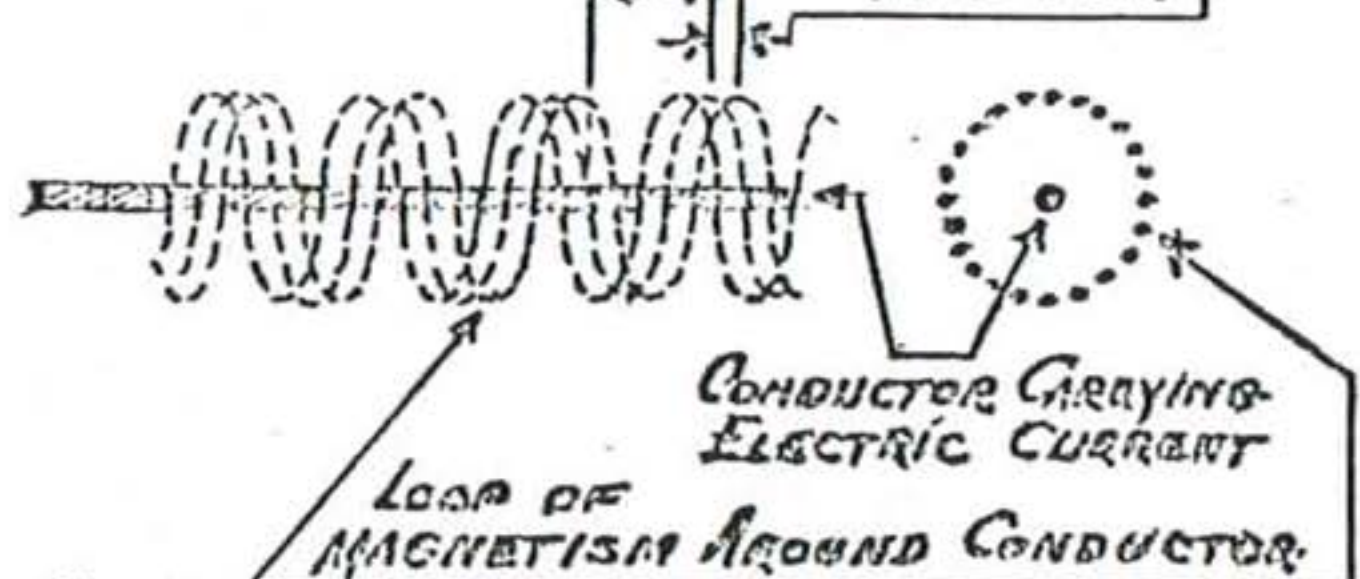
sulated" from the others by a coating of varnish. Mr. George Van Tassel, Director of the College of Universal Wisdom, and Editor of the interesting publication, *Proceedings*, in Yucca Valley, CA, has experimented extensively with these kinds of windings on cones and pyramids made of various materials and in several sizes.

The coil *winding* is composed of insulated wire — either double cotton-covered or enameled. Generally, the size of the wire has been given as #18 gauge copper — although aluminum, iron and even silver have also been used. The coil is *caduceus* wound — caduceus meaning that it is wound with two wires — the wires *opposite* each other around the core, and these two wires *crossing* each other on two opposite sides of the core's diameter with each complete turn. Hence, the coil, when completed, will have two rows of *bumps* on it. These bumps will be opposite one another and on each side of the coil, formed where the two wires cross. Great care should be taken in making this winding exact, so that these "cross-overs" (bumps) remain in a straight line along opposite sides of the core. Another way of winding the coil can be used by applying additional care and forming a long, slow, two-sided *spiral* of these bumps around the core. As far as I have been able to ascertain, the coil is but *one* layer of wire thick. I have heard of no multi-layered Smith Coils. I am inclined toward the idea, however, that such multi-layered coils should be researched to determine whether they produce any advantages over single-layered ones.

By now it is readily understandable that this type of coil can be wound only by hand because the winder continually needs to keep the "twist" out of the two winding wires. This twist comes from the winding process itself. It proves much easier

HOOPER MEASURED LAG OF LOOP IN 1950'S FOR TIME & DISTANCE.

HOOPER DETERMINED WHEN CURRENT HAD TRAVELED THIS FAR [Loop Of MAGNETISM HAD ONLY TRAVELED THIS FAR]



HANS CHRISTIAN ØRSTED DISCOVERED LOOP OF MAGNETISM IN 1820

covers a multitude of material combinations. When one says ferrite he discusses an *alloy* — a compound of iron which is represented by the chemical formula —  $\text{XFe}_2\text{O}_4$  — the "X" meaning any one of several other chemical elements — cobalt, zinc, cadmium, silver, gold, etc. So, in fact, when one says ferrite he hasn't said much! What kind of ferrite then, is the Smith Coil wound on? I have

of electrical and electronic products today. It is molded into all sorts of shapes and sizes — some highly complicated ones. A long list of concerns mold these ferrite products. Consulting Sweet's Industrial Index of Manufacturers in your local library will reveal more producers than you will wish to write down!

Ferrite is a magnetic material composed of diverse metals and



to keep the winding wires straight if two persons wind the coil together — one doing the winding of the coil, the other "unwinding" the twist! As will be explained later, there may well be an advantage in winding the coil from a "set" of two wires — each set composed of two wires twisted together — the twisted pairs being wound as a single wire each. Also, there may be added advantage in the coil's ultimate operation if three wires are first *braided* together, then this braid used as a single wire, with two such braided groups used to wind the coil. We will attempt to explain why such an advantage might accrue, later.

The size of the wire in these multiple-strand conductors may or may not be important. Some of those with whom I have consulted regarding this matter view the size as important. Also, the way in which current may be forced through them, or conducted, or allowed to pass through them, and in which direction, may result in varied final effects. Research could well be done along the lines of combining *different metals* in the wires of these multi-wire windings, such as making one wire copper, the other aluminum — or one iron, the other silver, etc. It also seems possible that solid wires plated with another metal might influence the coil's operation and behavior. I am not at all certain what differences would appear but they should all be checked for achieving coil efficiency.

While on the subject of the Smith Coil's winding, it might be well to suggest that an experiment could examine the linking together of "units" of these coils working in "multiples" or in "series" with one another. This run of tests could also include variables on different windings, different cores and differing sizes of wire as well as winding lengths. Such units

might operate one beside the other — end to end — or in the case of three units, arranged in a triangular shape, one to the other. A "cross" shape of units is also not without its possibilities. An arrangement whereby one unit could be made movable in relation to another unit might serve to show definite differences between a parallel position and a right angle or varying angle position.

How much actual research has already been done with this coil remains unknown. For one reason or another — most of those who worked with Mr. Smith refuse to divulge what they have learned. Fear, I think, acts as the major deterrent. Perhaps records of the detailed work have not been kept, or are lost. Though the matter of the coil is, now nearly twenty years old, there appears little about it in print. It seems there were two groups, each of which came by the original information at about the same time. My experience with these groups — or their survivors — is that considerable rivalry exists between them. Both are extremely guarded in what they are willing to explain concerning their experiences in making and using these coils. This leads me to believe that the operation of the coil can be altered with very slight changes in its make-up. Thus, there is apparently, a "wide open field" in which to maneuver in making and testing these coils. A broad choice of avenues is available for the experimenter to follow.

What does the Smith Coil *do*? How does it work? I have no personal scientific expertise covering the several theories regarding these coils, but from what I have been able to gather, it appears the coils are most adaptable to the radio and/or electronic fields. In the radio it has been indicated that the coil is adaptable for both transmission and reception of electromagnetic signals

of both terrestrial and extraterrestrial origin. I have never witnessed the actual reception of extraterrestrial signals but I have listened to tape recordings made by a voice identifying itself as Wilbert Smith, and describing the actual reception of extraterrestrial signals. The messages received were not in words, but in sounds of varying lengths, like a code, and these were, of course, then subject to "translation". Translations, are of course, open to all sorts of "opinions", interpretations, impressions, notions, etc.

The tape also carried the voices of two other men claiming to be electronic engineers who had witnessed and heard these phenomena recorded. They said that as far as they were concerned, they found no hoax in the apparatus, in its construction, or in its operation, but that they were likewise at a loss to know how to explain the results obtained!

A man who has had much first hand experience with the Smith Coil in *terrestrial* radio work, and who was, for some time before his death, in direct communication with Mr. Smith, observed, "I use mine (Smith Coil) as an antenna on 20 meters. I communicate with stations in all parts of the USA and Canada with it — using it *only* as an antenna, I even took my other antennas down so they would not be radiating. It has an *infinite* number of dips when coupled to a *grid dip meter*. Ordinarily, a coil has a dip on its fundamental, on the half wave and the 3rd harmonic. But this one had an *infinite number*, randomly spaced in the spectrum. The Smith Coil has *zero impedance* and *infinite resonance*! This is impossible — but true! It acts as a dead short on any frequency other than its own! It acts as a dead short on a receiver. One coil *cannot* be coupled to another, by RF, AF, or anything. One will not pick up

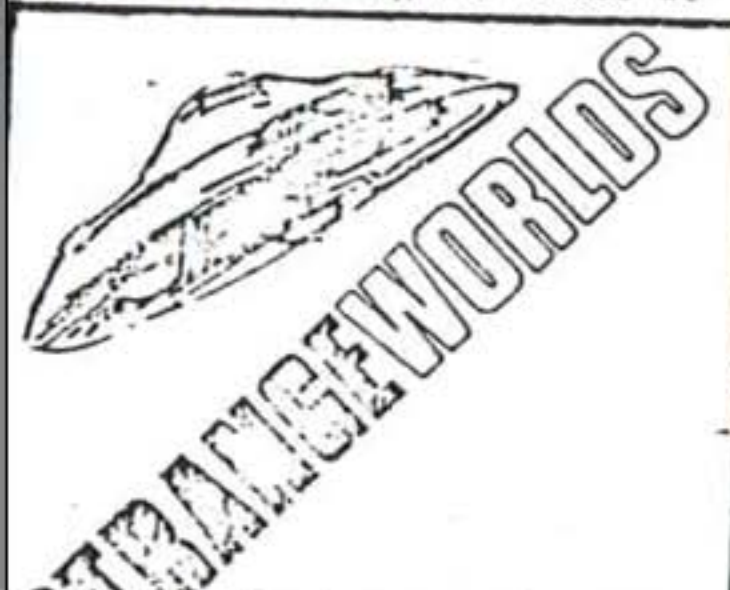
the signal from another one! This startled me. To be honest, I have been baffled by it ever since I got it!"

As this information is from a man highly versed in radio electronic techniques and who has been a "Ham" radio operator for nearly fifty years, I think we should take his views as well based and accurately formed.

Now, where can we find *any* basis for this Coil? As a possible explanation — or a partial one — I present the following. In 1820, Hans Christian Oersted discovered that an electric current-carrying conductor — a wire — had a *magnetic flux looped about it*, and that this loop extended out some distance from the wire on all sides, while it is carrying that current. Later experiments confirmed that this "loop" of magnetic flux *moved with the current's flow* in that conductor. Still much later research done by Dr. William J. Hooper, established formulas mathematically, by which this magnetic flux movement could be accurately calculated. Hence, the resulting information regarding its *lag behind* the current could be used empirically. Thus, as will be immediately seen, such a winding as the Smith Coil might allow these slower magnetic loops to "bump" into one another where the conductors cross. This might well slow their *forward* movement, while the electric current itself flows unrestrictedly! Now, what sort of "confusion" may this bumping of the magnetic loops cause? It could prove highly interesting! When an ordinary coil of wire is fed electrical energy it gets hot. The Smith Coil is said not to do so! This, of course, is diametrically opposed to the Law of the Conservation of Energy — one of the prime laws of present day



if and when it is generated? Could it be that the Smith Coil winding confuses the magnetic flux in such a way that it absorbs the generated heat and then transmits it away from the coil and into the surrounding air before enough of it has ac-



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cumulated to be recorded?

What other anomalies does it create? and do other types of this v. nding produce other effects? Do they — or can they — perform other work?

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## "For Absent Dowsing That's Pretty Good....."

by Louis J. Mataria  
American Society of Dowers

The lady called me on the phone. Her present well ran dry and she was excited about where to drill for water. At the time she called me on the phone a drill rig was set up over the existing well to drill the well deeper. Mrs. Cummings wanted to know if she should go deeper in the existing well or drill another new well.

I told her to wait a minute and I would see what reaction I could receive with the pendulum about the existing well condition. I wrote down the depths as follows:

150 feet	1	Gallon Per Minute
175 feet	2	" " "
180 feet	3	" " "
200 feet	4	" " "
210 feet	5	" " "
225 feet	6	" " "

The pendulum reaction was 180 feet and the flow was 3 g.p.m. I told her to take the well to 200 feet.

As you can see from her letter she received about 2 g.p.m. around 190 feet. A filter will take care of the tan mark in the water.

These figures received are certainly close enough to permit me to say that whoever is giving me the information is due for a star!

Dear Mr. Mataria,

You were so courteous and gracious when I called about our water situation. I'd like to report the outcome.

We are now getting 2 g.p.m. and the man was not specific about what depth he struck water but suggested around 190 feet. You said we should hit 3 g.p.m. at 180 ft. For absent dowsing, that's pretty good and I couldn't be happier.

Thank you so much for your kindness. It encouraged us to continue in the same spot with hope, at what will be a considerable saving over a completely new well. We stopped at 200 ft. as you suggested. We wish you continued success in what must be an enormously interesting field.